

Prevalence of *Strongyloides stercoralis* in a rural community of Bahirdar, North-Western Ethiopia

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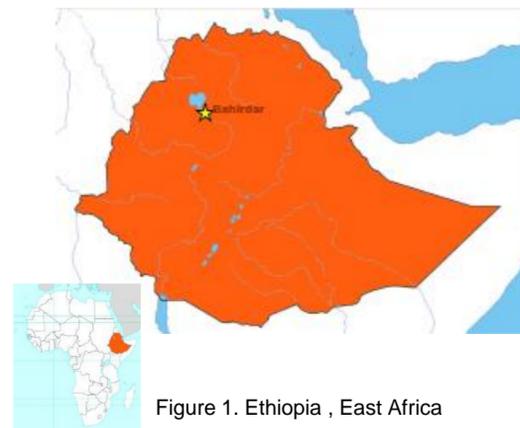
Background

Soil Transmitted Helminths (STH), hookworm, *Ascaris lumbricoides* and *Trichuris trichiura*, are most prevalent neglected tropical diseases (NTD) in sub-Saharan Africa. Since 2000, the World Health Organization (WHO) recommends mass drug administration (MDA), either with albendazole or mebendazole, to control the prevalence and the morbidity of STH. MDA programs target vulnerable groups: preschool and school-age-children (PreSAC and SAC).

The STH *Strongyloides stercoralis*, is one of the most neglected among the NTDs. Information on its occurrence is scarce, although high infection prevalence rates in the population in some geographical regions has been noted recently. Scientific groups are working for including *S. stercoralis* as STH. The diagnostic methods commonly used for STH detection failed to identify *S. stercoralis*, as they allow identifying eggs in faeces but had low sensitivity for detecting larva. As there is no gold standard diagnosis, a combination of methods is recommended to increase the detection. On the other hand, the treatment of choice is ivermectine, being resistant to albendazole.

Ethiopia is the third country with higher prevalence of hookworm in Africa, the second largest of *A. lumbricoides* and the fourth of *T. trichiura*. In 2013 the coverage of the MDA program was 61% of PreSAC and 22% of SAC. Data about prevalence of *S. stercoralis* are mostly related to HIV/AIDS patients, with high prevalence rates of infection (until 43%) in that population.

We designed a research with the purpose of 1) Checking if *S. stercoralis* is under-diagnosed in areas where only classic methods for egg detection are used for intestinal helminths detection; 2) Checking adult population as well as SAC because of *S. Stercoralis* ability to produce long lasting infections. (Data of this small study are from a preliminary phase to launch the research)



Material/methods

The study was carried out in November 2014, in a rural community belonging to Bahir Dar, Amhara region, in the North-West Ethiopia (Figure 1). Stool samples were collected in a "gott", or one of the districts in which the municipalities are divided in the rural area in Ethiopia. Houses were randomly selected. All the inhabitants of each selected house were invited to participate. The area is of high prevalence of hookworm. Stool were processed with a filtration-concentration method (Blparaprep MINI®, Laboratorios Leti, Barcelona) and a Baermann technique in the laboratory of the College of Medicine, Bahir Dar University.



Results

70 people were included: 52.9% men, 47.1% women, 22.2% of them ≤14 years old and 77.8% above 15. The mean age was 28 (range 5-90).

The overall prevalence of helminths was of 81,7%. See Figure 2

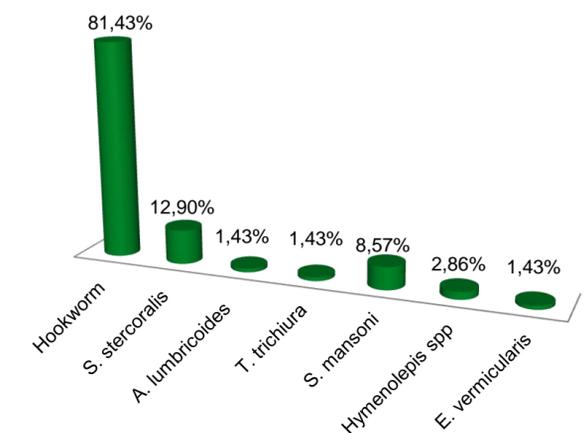


Figure 2. Helminths in the sample

The prevalence of *S. stercoralis* by concentration technique was 2.9%, by Baermann technique 11.4% ($p < 0.001$); being the combination 12.9%. It was detected in 16.3% of adults and 8.3% of SAC, although there was no difference between both groups.

Conclusions

For detection of *S. Stercoralis*, a combination of techniques is advisable in places of high prevalence of hookworm, which share the way of transmission. It is advisable to implement studies at community level to know the impact of the infection in both, SAC and adults.